Math 0350 Practice Test **Unit Three**

Chapters 10 part b and Chapter 11 **Martin-Gay 4th edition**

Rationalize each denominator. Assume all variables are positive.

1. $\frac{7\sqrt{3}}{\sqrt{7}}$ 2. $\sqrt{\frac{5}{12}}$ 3. $\frac{3}{\sqrt{27x}}$

Solve each of the following for x:

4. $\sqrt{x+7}=x+5$ 5. $\sqrt[3]{2x-3}-1=2$ 6. $\sqrt{x+5}=1+\sqrt{x}$

7. In right triangle ABC, angle C is 90^0. Side **a** is 4 inches and side **b** is 6 inches. Find the length of the hypotenuse, side **c**. Give the answer both in simple radical form and rounded off to 2 decimal places.

8. Write $\sqrt{-64}$ in terms of *i*. 9. Multiply: $\sqrt{-12}\cdot\sqrt{-3}$ 10. Divide: $\frac{\sqrt{-16}}{\sqrt{4}}$

Perform the indicated operations. Leave your final answer in $a+bi$ form.

11. $(-2+4i)(5-6i))$ 12. $\frac{-3+2i}{1-i}$

13. $(7+5i)-(3-4i)$ 14. $(3+4i)^2$

Solve using the square root property:

15. $2x^2-40=0$ 16. $(x+7)^2=-49$

Solve by completing the square:

17. $x^2+8x=2$ 18. $x^2-2x+10=0$

Solve using the quadratic formula:

19. $9x^2-10x+2=0$ 20. $x^2+2x+17=0$ 21. $x^2+20=7x$

Solve using any method:

22. $4x^4-5x^2+1=0$ 23. $x+7\sqrt{x}-8=0$ 24. $2x^{\frac{2}{3}}-3x^{\frac{1}{3}}+1=0$

25. $2x-1=x^2$ 26. $\frac{2}{x-1}-\frac{3}{x+1}=1$ 27. $(2x-1)^2-6(2x-1)+5=0$

Sketch a graph of each of the following quadratic functions. Label the vertex and 2 other exact points. List the domain and range.

28. $f(x)=(x+1)^2-2$ 29. $f(x)=4-x^2$ 30. $f(x)=-x^2-4x+5$

Solutions Practice Test 3

1. $\sqrt{21}$
2. $\frac{\sqrt{15}}{6}$
3. $\frac{\sqrt{3x}}{3x}$
4. $x=-3$
5. $x=15$
6. $x=4$
7. $2\sqrt{13}\approx 7.21\text{ in}$
8. $8i$
9. -6
10. $2i$
11. $14+32i$
12. $-\frac{5}{2}-\frac{1}{2}i$
13. $4+9i$
14. $-7+24i$
15. $x=2\sqrt{5}$ or $-2\sqrt{5}$
16. $x=-7+7i$ or $-7-7i$
17. $x=-4+3\sqrt{2}$ or $-4-3\sqrt{2}$
18. $x=1+3i$ or $1-3i$
19. $x=\frac{5+\sqrt{7}}{9}$ or $\frac{5-\sqrt{7}}{9}$
20. $x=-1+4i$ or $-1-4i$
21. $x=\frac{7}{2}+\frac{\sqrt{31}}{2}i$ or $\frac{7}{2}-\frac{\sqrt{31}}{2}i$
22. $x=1,-1,\frac{1}{2}$ or $-\frac{1}{2}$

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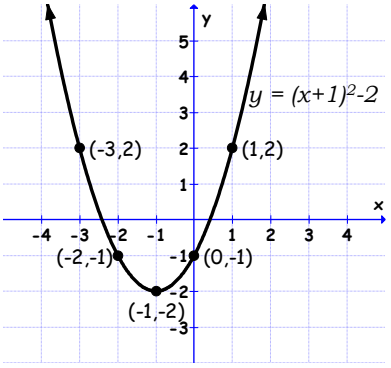
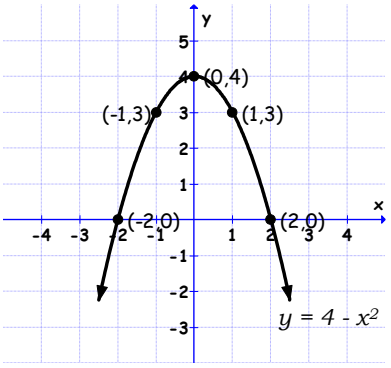
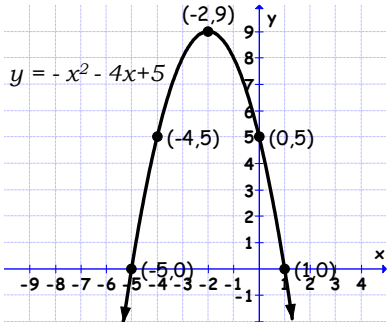
23. $x=1$
24. $x=1$ or $\frac{1}{8}$
25. $x=1$
26. $x=-3$ or 2
27. $x=1$ or 3
28. Domain: $(-\infty,\infty)$ Range: $[-2,\infty)$



29. Domain: $(-\infty,\infty)$ Range: $(-\infty,4]$



30. Domain: $(-\infty,\infty)$ Range: $(-\infty,9]$


(-2,9)
y = - x² - 4x+5
(-4,5)
(0,5)
(-5,0)
(1,0)
y
x